

Claims:

Sch. al 1. Writing instrument comprising a substantially sleeve-shaped shaft (20), a main axis (100), a terminal part (50,35,20b) at a rear end of said shaft, and a substantially conical tip device (10) at a front end portion of said shaft (20), characterized in that one of

- said tip device (10) being adapted to be controlled (40,43,9) pivotable (inclinable) in a plane comprising said main axis (100) and relative to said sleeve-shaped shaft (20); *and*
- an inclination angle (α) of a cone axis (101) of said tip device (10) being adjustable (40,43,9) in relation to said main axis (100).

10 2. Writing instrument according to claim 1, said inclination (α) of the tip being changed from the terminal part (50,35,20b), particularly providing a longitudinal movement of an ink device or a refilling device (40) received in said shaft, said movement being effected in a longitudinal direction (x) and relative to a socket or bearing (23;13;14;L) between said tip (10) and said shaft (20).

15 3. Writing instrument according to claim 1, wherein a refilling device (40) as ink barrel, comprising an elastically flexible portion (42) at a front end thereof, said portion changing its deflection, particularly also its bending stress, upon changing said inclination angle (α).
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20 25 Writing instrument according to claim 3, wherein, at its front end, said elastically flexible portion (42) is adapted as a writing tip (41,30), said writing tip protruding through a front end opening (29) of said tip (10) to make use of said bending stress of said elastically flexible portion for effecting a returning force on said tip (10) having said adjustable inclination angle.

30 35 5. Writing instrument according to claim 1, wherein said tip (10) is pivotably received at a bearing portion (13,14;23;L) at said shaft (20), particularly said bearing portion (L) being located outside of said main axis (100) or only one single bearing portion (13,14) being provided in the area of a sleeve wall of said shaft (20), said bearing portion also constituting a pivoting axis for varying the inclination angle of said tip.

- Suk a2* 6. Writing instrument according to one of claims 1 and 2, wherein said shaft (20) is divided at a dividing position (25,26,27) and adapted to allow a distance ($x_1, x_2; y_1, y_2$) of two shaft parts (20',20'') to be varied, wherein particularly one of
(a) at least one thread element is provided for connecting said two shaft parts (20a,33) variably with respect to their distance from each other; and
(b) an adjusting sleeve (63) is provided, for connecting two shaft parts (64',64'') variably with respect to their distance from each other, said connection being non-rotatable, but movable in a longitudinal direction (21,22).
- 10 7. Writing instrument according to one of claims 1 and 5, wherein guiding means (21,22) are provided, said guiding means extending in a parallel direction with respect to said pivoting direction and being located at the front end of said shaft (20), particularly at a distance from said main axis (100) and on both sides thereof, for guiding one of said controlled pivoting movement and said adjustment of the inclination angle (α) of said tip (10), said tip preferably being flattened (11) in an area of said guiding means (21,22), for blocking a lateral tilting in a transverse direction with respect to said plane comprising said main axis (100).
- Suk B 20* 8. Writing instrument according to claim 5, wherein a coupling portion (9;9a,9b) is provided at an end portion of said tip (10), said portion being offset in relation to said bearing portion (13,14;23;L) in said plane comprising said main axis.
- Suk a7* 25 9. Writing instrument according to one of claims 1 and 4, wherein a leaf-shaped spring (17) is provided at a backwards facing end portion of said tip (10), said spring extending into an inside of said shaft (20), for contacting an inner wall of said shaft and for effecting resetting forces upon an increase of inclination of said tip (10).
- Suk B 30* 10. Writing instrument according to claim 1, wherein, on its edge, said tip (10) comprises limiting means (12), for limiting maximum inclination portions by contacting protrusions (21a,22a) located at the inside of said shaft, particularly such protrusions which are provided directly (integrally) with guiding means (21,22) for laterally guiding said conical tip (10).
- 35 11. Writing instrument according to claim 1, wherein said tip (10) is received (23,13;L) at the inside and at the front end of said shaft, said tip (10) being particularly adapted to be inserted into said shaft (20) from the rear end thereof.

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12. Writing instrument according to claim 1, wherein said tip (10) has an elongated extension, the length of said tip being larger than a diameter at the rear end of said tip, particularly more than one and a half times as large.
- 5 13. Writing instrument according to one of claims 1 and 12, wherein said tip (10) has a conical shape and is adapted to be symmetrical with respect to a cone axis (101).
- Sub B1*
- 10 14. Writing instrument according to claim 1, wherein said terminal part (50) of said shaft is one of rotatably received (50a,51) in said shaft end, particularly in a thread element having an inclination angle, and provided with an inclined surface at its front end, for one of controlling and adjusting a longitudinal movement (x) of said refilling device (40) according to claim 2.
- 15 15. **Writing instrument** according to the introductory part of claim 1, characterized in that said tip device (10) is of an elongated shape and has a cone axis (101), said cone axis being variable in its angle (α) relative to said main axis (100) of the writing instrument.
- Sub C*
- 20 16. Writing instrument according to one of claims 1 and 15, wherein said tip device (10) comprises a rear end portion (9;9a,9b) cooperating with a shoulder portion (43,66b) of a particularly integral refilling device (40), for providing a contour control for the change of inclination of said tip device.
- 25 17. Writing instrument according to one of claims 1 and 15, wherein a contour control means (9) is provided at said tip device, said control means comprising at least one, particularly two laterally spaced web segments, one of them comprising two web portions (9a,9b) extending to form an angle (β) of less than 180°, particularly between 160° and 180°, for controlling the inclination of said tip device.
- 30 18. Writing instrument according to claim 14, wherein said terminal part (50) of the shaft is rotatably received in said shaft (20), particularly being one of hardly turnable and provided with circumferential lock-in positions (52).

19. Writing instrument according to claim 17, wherein the kink angle (β) of said web portions (9a,9b) substantially corresponds to a maximum inclination angle (α_{max}) of said tip device (10) relative to said main axis (100) of the writing utensil or the shaft (20).
- 5 *Suh B1*
20. Writing instrument according to claim 1, wherein said tip device is provided with at least one coupling means (9; 9a,9b) at its backwards facing end portion, a shoulder or step (43,66d) of said refilling device (40,65) being coupled to said coupling means, for applying forces on said tip (10), said forces controlling the inclination (α) of said tip device.
- 10 *Suh B1*
15. Writing instrument according to one of claim 15 and claim 6, wherein an axial refilling device (40,65) is provided, and wherein a first elastic force acts on said refilling device by an axially acting spring means (41a,41b), for axially pre-tensioning said refilling device one of towards said tip (10) and away from said tip (10).
- 15 *Suh B1*
20. Writing instrument according to claim 6, wherein one of said dividing position (26) being located close to said terminating part (35) of said shaft and said dividing position (25) being located close to said tip device (10).
- 20 *Suh B1*
25. Writing instrument according to one of claim 1 and claim 15, wherein a length of one of said shaft (20;20';20") and said writing instrument (10,20,35,33) being varied upon or for varying said inclination angle (α) of said tip device (10).
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30. Writing instrument according to one of claim 1 and claim 15, comprising a refilling device (65) being tensioned by a compression spring (41b) such that said refilling device is urged against said tip (10), said compression spring being dimensioned such that it receives/absorbs writing forces without substantially changing the position of said refilling device (65), but effects a smaller torque on the tip (10) than a returning force of a further elastic means (42,17), said means being also coupled to said tip (10) to allow it to be pivoted back into a straight position with respect to said main axis (100).
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25. Writing instrument according to one of claims 1 and 15, comprising a refilling device (40) being elastically tensioned by a pressure spring (41a) in relation to said tip (10), and a second elastic force being applied such on said tip (10) and dimensioned such that a torque applied by said compression spring (41a) is at least compensated.
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26. Writing instrument according to one of claims 1 and 15, comprising a means (43,9,63,50) for controlling and adjusting said inclination angle (α) of said tip, and independently thereof, a further means for permitting an opening of said writing instrument to exchange said refilling device.
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27. Writing instrument according to one of claims 1 and 15, comprising a means (20c) connected to said tip device (10), particularly employing a leaf spring (17) according to claim 9, for directly controlling, particularly adjusting, varying and returning the inclination angle of said tip device, said control being effected by or starting out from said shaft (20).
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